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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/706,839 | 11/12/2003 | Taner Dosluoglu | DSR14446 | 6930 |

7590 10/27/2006
STEPHEN B. ACKERMAN
28 DAVIS AVENUE
POUGHKEEPSIE, NY 12603

EXAMINER

WEISS, HOWARD

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2814

DATE MAILED: 10/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/706,839 | DOSLUOGLU, TANER | |
| | Examiner | Art Unit | |
| | Howard Weiss | 2814 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Attorney's Docket Number: DSR14446

Filing Date: 11/12/03

Continuing Data: Claims benefit of 60/450,089 (2/26/2003); RCE established
12/16/2005 and 10/12/2006

Claimed Foreign Priority Date: none

Applicant(s): Dosluoglu

Examiner: Howard Weiss

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/12/2006 has been entered.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "14" and "10" (on the right side of Figure 1) have both been used to designate the substrate. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1 to 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims state that the degree of carrier depletion of the overlap region is controlled by the potential of the respective N/P well. The Specification states that overlap region is designed to react to the N/P well potential ~~is~~ in this manner. However, the Specification does not describe how to design the overlap region to be reactive to potential changes and, therefore, not enabling one of ordinary skill in the art to make and/or use the instant invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 to 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwanami et al. (U.S. Patent No. 4,906,856).

Iwanami et al. show all aspects of the instant invention (e.g. Figure 2a) including:

- a p type silicon substrate 1
- an N well 3 formed in said substrate and a P well 5 formed in said N well
- a deep N well 2 formed beneath said P well
- an overlap region formed between said N well and said deep N well providing electrical communication between these two wells

- a first **8** and second **8'** N regions formed in said P well and a P region **4** formed in said N well
- all part of an active pixel array (e.g. Figure 3)

In reference to the claim language referring to how the overlap regions reacts to N well potential changes (i.e. being depleted or not depleted of charge carriers), intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Additionally in reference to the claim language pertaining to how the overlap region reacts to potential changes of the N well (i.e. being depleted or not depleted of charge carriers), the claiming of a new use, new function, or unknown property, which is inherently present in the prior art, does not necessarily make the claim patentable. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and *In re Swinehart*, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); please see MPEP § 2112. Since Iwanami et al. show all the features of the claimed invention, how the overlap region reacts to potential changes in the N well is an inherent property of Iwanami et al.'s invention.

6. Claims 18 to 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al. (U.S. Patent No. 6,023,293).

Watanabe et al. show all aspects of the instant invention (e.g. Figures 2 and 11) including:

- a n type silicon substrate **100**
- an P well **120** formed in said substrate and a N well **140** formed in said P well
- a deep P well **110** formed beneath said N well

- an overlap region formed between said P well and said deep P well providing electrical communication between these two wells
- a first **142** and second **143** P regions formed in said N well and a N region **26** formed in said N well
- all part of an active pixel array (e.g. Figure 19)

In reference to the claim language referring to how the overlap regions reacts to P well potential changes (i.e. being depleted or not depleted of charge carriers), intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Additionally in reference to the claim language pertaining to how the overlap region reacts to potential changes of the P well (i.e. being depleted or not depleted of charge carriers), the claiming of a new use, new function, or unknown property, which is inherently present in the prior art, does not necessarily make the claim patentable. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and *In re Swinehart*, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); please see MPEP § 2112. Since Iwanami et al. show all the features of the claimed invention, how the overlap region reacts to potential changes in the P well is an inherent property of Watanabe et al.'s invention.

Response to Arguments

Applicant's arguments filed 9/11/2006 have been fully considered but they are not persuasive. The Examiner's responses in the Office Actions mailed 9/14/2005, 1/24/2006 and 7/7/2006 are still pertinent and considered repeated herein. Additionally, at least one of the prior art (e.g. Watanabe et al. Column 13 Lines 29 to 58) describes how the N well **140** can effect the level of depletion of the overlap region between the P well **120** and the deep P well **110**.

Because of these reasons and those stated in the present office action, the stated claims remain rejected.

Conclusion


7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).
8. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on **(571) 272-1705**.

Art Unit: 2814

10. The following list is the Examiner's field of search for the present Office Action:

| Field of Search | Date |
|--|-----------------|
| U.S. Class / Subclass(es): 257/291, 293, 371 | Thru 10/23/2006 |
| Other Documentation: none | |
| Electronic Database(s): EAST | Thru 10/23/06 |

HW/hw
23 October 2006


Howard Weiss
Primary Examiner
Art Unit 2814